

REMARKS

Claims 1-20 are pending. Claims 1, 2, 6, 7, 10, 11, and 12 are being amended. Claim 13 is being canceled. No new matter is being added.

Figures 1 and 2 are being amended as per the attached drawing to overcome the objections set forth in section 1 of the Office Action.

Claims 16-20 are allowed. Claims 2-5, 7-10, and 13 and 14 stand objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form. Appreciation is expressed for the indication of allowance of these claims. Accordingly, pending claims 2, 7, 10, and 11 have been amended to incorporate the limitations of pending claim 1. Also, pending claim 12 has been amended to incorporate the limitations of pending claim 13 and pending claim 13 has been canceled without prejudice or disclaimer of the subject matter recited therein.

Claims 1 and 12 stand rejected under 35 U.S.C. 102(e) as being anticipated by Takahashi et al., U.S. Patent No. 6,717,434 (Takahashi). Claims 1, 6, 11-21, and 15 stand rejected under 35 U.S.C. 102(e) as being anticipated by Fukuoka et al, U.S. Publication No. US2004/0052249 (Fukuoka).

In contrast to the present invention, neither Takahashi nor Fukuoka disclose or suggest a bi-directional level shifter including bi-directional level shift circuitry coupled between the first signal terminal and the second signal terminal, all as recited by claim 1.

Section 3 of the Office Action states that Takahashi discloses “level shift circuitry (472).” However, Takahashi does not disclose that level shifter 472 is bi-directional. Referring to Figure 4B of Takahashi, level shifter 472 is connected to the output of buffer 470. The arrow at the output of buffer 470 only points towards shifter 472. There is no arrow pointing from shifter 472 towards buffer 470. Thus, the signal path through shifter 472 is only one way. Accordingly, there is no teaching or suggestion in Takahashi that level shifter 472 includes bi-directional level shift circuitry.

Section 4 of the Office Action states that Fukuoko discloses “level shift circuitry (LLC)” of Figure 11. However, logic level converter (LLC) of Fukuoko does not include bi-directional level shift circuitry.

Figure 11 of Fukuoko shows a first signal path going from terminal A to terminal B via inverter IN34, logic level converter (LLC), and inverter IN41. Figure 11 shows a second signal path going from terminal B to terminal A via inverter IN42, logic level converter (LLC), and inverter IN35. Thus, Figure 11 of Fukuoko shows that there are two “one way” signal paths through logic level converter (LLC). Accordingly, logic level converter (LLC) would appear not to include bi-directional level shift circuitry in that there is a separate signal path through logic level converter (LLC) for each signal direction. The appearance of two signal paths through logic level converter (LLC) would tend to suggest that the level shift circuitry in logic level converter (LLC) for each signal path is not bi-directional. Consequently, claim 1 is allowable over Fukuoko.

In contrast to the present invention, Fukuoko does not disclose a bi-directional level shifter wherein the bi-directional level shifter has only one signal line that crosses a domain boundary between the first voltage domain and the second voltage domain, all as recited in amended claim 6.

The circuit of Figure 11 of Fukuoko does not appear to meet this limitation. Accordingly, claim 6 is allowable over Fukuoko.

In view of the amendments and remarks set forth herein, the application is believed to be in condition for allowance and a notice to that effect is solicited. Nonetheless, should any issues remain that might be subject to resolution through a telephonic interview, the Examiner is requested to telephone the undersigned.

If Applicant has overlooked any additional fees, or if any overpayment has been made, the Commissioner is hereby authorized to credit or debit Deposit Account 503079, Freescale Semiconductor, Inc..

Respectfully submitted,
SEND CORRESPONDENCE TO:

Freescale Semiconductor, Inc.
Law Department

Customer Number: 23125

By: _____

A handwritten signature in black ink, appearing to read 'Dolezal', is written over a horizontal line.

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